

This fact sheet answers the most frequently asked health questions (FAQs) about *n*-nitrosodimethylamine. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

**HIGHLIGHTS:** *n*-Nitrosodimethylamine is produced by industry in small amounts but may be formed in the environment from chemical reactions. It causes liver cancer in animals. This chemical has been found in at least 1 of the 1,177 National Priorities List sites identified by the Environmental Protection Agency (EPA).

### What is *n*-nitrosodimethylamine?

(Pronounced n nī'trō-sō dī mēth-ăl'ə-mēn)

*n*-Nitrosodimethylamine is produced by industry only in small amounts for research. At room temperature, it is a yellow liquid with no distinct odor. It was used to make rocket fuel, but this use was stopped after unusually high levels of this chemical were found in air, water, and soil samples collected near a rocket fuel manufacturing plant. It is used in some cosmetic and toiletry products and in cleansers.

*n*-Nitrosodimethylamine is unintentionally formed during various manufacturing processes and in air, water, and soil from reactions involving other chemicals called alkylamines. It is also found in some foods and may be formed in the body.

### What happens to *n*-nitrosodimethylamine when it enters the environment?

- ☐ *n*-Nitrosodimethylamine may be found in air, water, and soil.
- ☐ When released to the air, it is broken down by sunlight in a matter of minutes.

- ☐ In water, it may break down when exposed to sunlight or by natural biological processes.
- ☐ When released to soil, it may evaporate into air.
- ☐ It could also sink down into deeper soil.

### How might I be exposed to *n*-nitrosodimethylamine?

- ☐ Eating food containing it, such as cured meats, fish, and cheese.
- ☐ Using toiletry and cosmetic products such as shampoos and cleansers that contain it.
- ☐ Breathing or inhaling cigarette smoke, which may contain low levels.
- ☐ Eating foods containing alkylamines, which can cause *n*-nitrosodimethylamine to form in the stomach.
- ☐ Working in industries such as tanneries, pesticide manufacturing plants, and rubber and tire plants.

**ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html>**

### **How can *n*-nitrosodimethylamine affect my health?**

When people were exposed to very high levels of *n*-nitrosodimethylamine, liver damage occurred. Little else is known about the health effects of *n*-nitrosodimethylamine in people. Liver effects have also been seen in animals that ate food, drank water, or breathed air containing high levels of *n*-nitrosodimethylamine.

Mice that were fed *n*-nitrosodimethylamine during pregnancy had offspring that were born dead or died shortly after birth.

### **How likely is *n*-nitrosodimethylamine to cause cancer?**

*n*-Nitrosodimethylamine exposure has been shown to result in an increase in liver and lung cancer in animals. No information is available on whether it causes cancer in people. The Department of Health and Human Services (DHHS) has determined that *n*-nitrosodimethylamine may reasonably be anticipated to be a human carcinogen.

### **Is there a medical test to show whether I've been exposed to *n*-nitrosodimethylamine?**

Samples of your blood and urine can be tested to determine if you have been recently exposed to *n*-nitrosodimethylamine. These tests must be done soon after the exposure occurred. These tests will not tell you whether your health will be affected by *n*-nitrosodimethylamine. They are not routinely available in hospitals and clinics because they require special equipment.

### **Has the federal government made recommendations to protect human health?**

The EPA recommends that levels in lakes and streams should be limited to 0.00069 parts of *n*-nitrosodimethylamine per billion parts of water (0.00069 ppb) to prevent possible health effects from drinking water or eating fish contaminated with *n*-nitrosodimethylamine.

The EPA requires that spills or accidental releases of 10 pounds or more of *n*-nitrosodimethylamine be reported to the EPA.

The federal recommendations have been updated as of July 1999.

### **Glossary**

**Carcinogen:** A substance that can cause cancer.

**CAS:** Chemical Abstracts Service.

**Evaporate:** To change into a vapor or a gas.

**National Priorities List:** A list of the nation's worst hazardous waste sites.

**Pesticide:** A substance that kills pests.

**ppb:** Parts per billion.

### **References**

Agency for Toxic Substances and Disease Registry (ATSDR). 1989. Toxicological profile for *n*-nitrosodimethylamine. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html> ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

